NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD
(Texas Addendum)

TERRACE, GRADIENT
(Ft.)
CODE 600C

This addendum serves as an integral part to the companion Standard of the National Handbook of Conservation Practices. The contents of this addendum magnify national guidance and implement experience factors important to the installation of this practice under the range of conditions found within Texas. Criteria or guidance contained herein addresses items to be conformed to in addition to satisfying the items of he Standard in the National Handbook of Conservation Practices.

CONDITIONS WHERE PRACTICE APPLIES

The channel type terrace is recommended in all instances where it is desirable to have a grade in terraces.

DESIGN CRITERIA.

Spacing *Design dimensions provided in this addendum are based on spacing determined by the V.I. formula. Spacing based on RUSLE equation will require an evaluation of site specific conditions for determination of design dimensions.*

The formula V.I. = xs + y in the National Terrace Standard should be used to determine terrace spacing. Values of "y" in the formula sha11 be selected between 1.5 and 2.5 where gradient terraces are used. A value of y = 1.5 will normally be selected for general row crop farming with average tillage conditions. A value of y = 2.0 will normally be selected where the land is planted to small grain or other sown crops over 75 percent of the time. The "y" value may be increased or decreased by 0.5 when soil erodibility or tillage systems warrant the change. The average slope above each terrace should be used in determining the percent slope used in the vertical interval equation. The horizontal interval determined from use of the above formula shall define the terrace spacing (Figure 3} measured from the ridge of one terrace to the ridge of the next terrace or measured from channel to channel.

When terrace spacings are designed by RUSLE in lieu of spacing formula above, the terrace design for capacity and spacing must be approved by the field engineer.

The top terrace in a system should be spaced not more than one vertical interval below the top of the slope, or below a diversion terrace, as the case may be. Where it is necessary to exceed one vertical interval by more than 30 percent for the top terrace, the terrace shall be designed to handle the expected runoff safely, or a diversion shall be used.

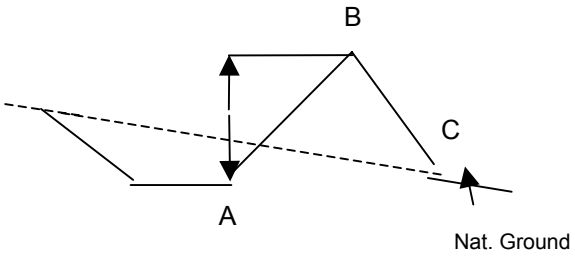
The diversion standard should be used where terraces are needed on non-cropland.

Channel Grade *When parallel terraces are designed, and in order to reach an acceptable parallel pattern, grades may*

be varied by sections of terrace. The average grade of the first 400 feet of a terrace nearest the upper end or divide shall not exceed 1.0 foot per 100 feet and the average grade of the next 400 feet shall not exceed 0.8 foot per100 feet. Remainder of the terrace shall have an average grade not to exceed 0.6 foot per 100 feet of length.

Cross Section *The dimension of gradient terraces (V.I. formula spacing) shall meet the following:*

Sketch of terrace cross section:



A = End of front slope of terrace. Also bottom of water channel.

B = Top of terrace ridge (measurement. for height to be made 2 feet from center of terrace on a minimum 3.0 ft crown width).

C = End of back slope at natural ground line.

The height of the ridge above the bottom of the water channel which is the vertical distance "B" above "A" as shown in the above sketch shall be a minimum of 1.2 feet up to land slopes of 4 percent or less and increased to a minimum of 1.3 feet up to land slopes of 5 percent.

The channel cross section measured from the top of the terrace (point "B" of the sketch) shall be a minimum of 21 square feet for land slope equal to or less than 5 percent and/or length of 2000 feet or less, draining in one direction. Increase in minimum channel capacity for lengths in excess of 2000 feet are given in Terrace Length Section of this addendum.

The minimum width of the terrace ridge measured from points "A" to "C" on the sketch shall be 20 feet up to 5 percent land slopes. Terrace dimensions on land slopes above 5 percent will require a special design in accordance with the criteria in National Terrace Standard.

Cross section dimensions of terraces where spacing exceeds that provided by V.I. formula should be evaluated for capacity and approved by a field engineer.

Terrace Length *Terrace lengths draining in one direction should be held to 2000 feet or less. A few longer terraces in a system may be needed to reach a satisfactory outlet. By increasing the terrace channel capacity from 21 square feet to 29 square feet terrace lengths may be increased as follows:*

1. *2500 feet in areas where the average annual rainfall exceeds 28 inches.*

2. 3000 feet in areas where the average annual rainfall less than 28 inches.

PLANS AND SPECIFICATIONS

Construction specifications describing the requirements for applying this practice shall be developed from the generalized Construction Specifications (Texas) for Terrace (Gradient). The Construction Details section shall be used to describe site specific job requirements.

APPROVAL AND CERTIFICATION

TERRACE (GRADIENT)

(ft.)

CODE 600C

PRACTICE STANDARD APPROVED:

/s/ JOHN W. MUELLER	06/24/02
State Conservation Engineer	**Date**

NRCS, Texas
JUNE, 2002